

REMARKS

Claims 1, 3-17, 19-20 and 22-26 are pending for further examination. Claim 2 has been canceled.

Amendments

Claim 1 has been amended and now recites "forming a subset of training data vectors used as a basis to reconstruct input space vectors in a feature space, subsequently deriving a support vector machine classification function involving a plurality of support vectors from reconstructed training data vectors." Support for this amendment can be found, for example, in canceled claim 2, previously presented claim 4, on page 6, lines 20-26, page 9, line 14 – page 10, line 6, page 18, line 20-page 19, line 22 and page 25, lines 4-21. Claims 19, 22 and 23 have been similarly amended.

In addition, claim 1 has been amended and now recites "storing the support vector machine classification function in a currency validator processing system, wherein the support vector machine classification function is applied by the currency validator processing system to received items of currency." Support for this amendment can be found, for example, in FIG. 4, on page 4, lines 8-10, and page 22, line 27 – page 26, line 4.

Claim 4 has been amended and now recites "forming the subset of training data vectors comprises selecting training data vectors such that an image of the subset of training data vectors is representative of an image of the training data in the first space, wherein the first space corresponds to a kernel mapping of a second space corresponding to the space of input data." Support for this claim can be found, for example, on page 4, lines 21-30 and page 9, lines 14-16.

Claim 26 has been added. Support for this claim can be found, for example, on page 4, lines 21-30 and page 9, lines 14-16.

Other claims have been amended, for example, to further clarify the features of the claims or correct typographical errors.

No new matter has been added.

Applicant respectfully requests entry of these amendments.

35 U.S.C. § 112 Rejection

Claim 13 was rejected under 35 U.S.C. § 112, second paragraph, as indefinite.

In light of the amendment to claim 13, Applicant respectfully requests withdrawal of the rejection of claim 13 as indefinite.

35 U.S.C. § 101 Rejections

Claims 1-11, 17, 19 and 25 were rejected under 35 U.S.C. § 101 because the claims were directed to non-statutory subject matter.

In light of the amendments made to claims 1 and 19, Applicant respectfully requests withdrawal of the rejections of claims 1-11, 17, 19 and 25 under 35 U.S.C. § 101.

35 U.S.C. § 102(b) Rejections

Claim 1-11, 17, 19 and 25 were rejected under 35 U.S.C. § 102(b) as anticipated by EP 0887761 (Burges).

As explained above, claim 1 now recites “forming a subset of training data vectors used as a basis to reconstruct input space vectors in a feature space, subsequently deriving a support vector machine classification function involving a plurality of support vectors from reconstructed training data vectors.” In contrast, EP 0887761 does not disclose these features. Instead, EP 0887761 discloses that the support vector machine is derived from all of the training samples (*see* page 3, line 58 – page 4, line 3 and page 5, lines 41-57). This differs from the method of claim 1. Claim 1 first forms a subset of training data vectors that acts as a base to reconstruct input space vectors in a feature space (*i.e.*, used as a base to express input space vectors in the feature space) (*see* page 6, lines 18-23 of Specification). After the subset of training data vectors is formed, training data vectors are reconstructed in the feature space and used to derive the support vector machine. As such, because EP 0887761 derives the support vector machine from all of the training samples, it does not disclose the foregoing claimed features.

While EP 0887761 discloses choosing a reduced set, EP 0887761 does not disclose choosing the reduced set before deriving the support vector machine (*see e.g.*, page 11, lines 36-45). Instead, EP 0887761 discloses training a support vector machine to generate a set of support vectors (*see* Fig. 3, steps 100-110 and page 11, lines 36-39). After the set of support vectors is generated, EP 0887761 discloses forming the reduced set of vectors that approximate the support vector machine (*see* Fig. 3, step 115 and 120 and page 11, lines 40-41). As such, EP 0887761 does not disclose using the reduced set of vectors to reconstruct training data as a base to reconstruct training data vectors and subsequently deriving the support vector machine from the reconstructed training data vectors. Therefore, EP 0887761 does not disclose the foregoing claimed features.

Furthermore, FIG. 1 of EP 0887761 and the corresponding sections of the specification do not disclose “forming a subset of training data vectors used as a basis to reconstruct input space vectors in a feature space, subsequently deriving a support vector machine classification function involving a plurality of support vectors from reconstructed training data vectors.” EP 0887761 discloses that the support vector machine is derived from the input data vectors from the training set, but does not disclose forming a subset of training data vectors used as a basis to reconstruct vectors (*see* FIG. 1 and page 3, line 57-page 4, line 3).

In light of the foregoing remarks, Applicant respectfully requests withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by EP 0887761.

Neither GB 2254949 nor the U.S. Patent No. 5,757,001 (Burns) discloses the features missing from EP 0887761 or renders the claimed subject matter obvious.

The dependent claims should be allowable for the reasons discussed above in connection with claim 1. Furthermore, the dependent claims recite additional features that make the dependent claims independently patentable.

For reasons similar to those discussed above in connection with claim 1, claim 19 should be allowable.

Applicant respectfully requests withdrawal of the rejection of claim 19.

35 U.S.C. § 103(a) Rejections

Claims 12-16, 20 and 22-24 were rejected under 35 U.S.C. § 103(a) as unpatentable over the EP 0887761 in view of GB 2254949 (Furneaux).

Claims 12-16, 20 and 22-24 were rejected under 35 U.S.C. § 103(a) as unpatentable over the EP 0887761 in view of the Burns patent.

In light of the remarks made in connection with claims 1 and 19, Applicant respectfully requests withdrawal of the rejection of claims 12-16 and 20.

For reasons similar to those discussed above in connection with claim 1, claims 22 and 23 should be allowable. Applicant respectfully requests withdrawal of the rejection of claims 22 and 23.

Double Patenting Rejections

Claims 1-17, 19-20 and 22-25 were rejected on the ground of nonstatutory obviousness-type double patenting.

Applicant are submitting a terminal disclaimer concurrently herewith and respectfully request withdrawal of the double patenting rejections.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or

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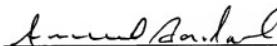
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other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

The Petition for Extension of Time fee in the amount of \$1110.00 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

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